Science with Ground-Based Coronagraphy

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Ground-based coronagraphy has played an important role in the study of substellar mass objects in the solar neighborhood, including the discovery and investigation of brown dwarfs and detailed morphology of circumstellar disks. Coronagraphy, in association with adaptive optics on the ground, will play a major role in comparative exoplanetary science within the next decade. I will review the state of the art and the next generation of these sorts of instruments and what can be expected from a scientific standpoint. I will also demonstrate the critical connections between this work and the planned extraterrestrial missions employing coronagraphy.